CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO REGION

ORDER NO.93-025

TO AMEND SITE CLEANUP REQUIREMENTS, ORDER NO.90-133 FOR:

UNOCAL CORPORATION

ARCO CORPORATION

FOSTER CHEMICAL CORPORATION

THE KOCH TRUST

For properties at:
301,401, AND 411 HIGH STREET AND 3675 ALAMEDA AVENUE,
OAKLAND, ALAMEDA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. Site Description - Union Oil Company, Unocal Chemicals Division (Unocal), Arco Corporation (Arco); Foster Chemical Company; and the Koch Trust hereinafter referred to as the Dischargers own, owned or operated businesses at High Street (the Site) in Oakland, Alameda County. The Site regulated by this Order is located adjacent to the Oakland Inner Harbor which is contiguous with the San Francisco Bay.

   Unocal owns the former bulk chemical distribution facility at 401 High Street. The bulk distribution facility discontinued opertion in December 1990. Arco owned property at 301, 401 and 411 High Street where they operated a bulk petroleum facility. Arco and Unocal held a joint interest in American Mineral Spirits Company, Western (AMSCO-W) which also operated a bulk chemical plant at the site. Arco leased all of the 401 and a portion of the 411 property to AMSCO-W. AMSCO-W in turn leased a portion of its property to Foster Chemical Company which operated a solvent storage and distribution facility.

   The property at 301 and 411 High Street is currently owned by the Koch Trust (Koch) and occupied by Big B Lumberteria, a retail lumber business. North of the High Street properties is a property owned by the Learner Company, located at 3675 Alameda Avenue. Since 1950, Learner has owned and operated a

scrap metal operation at this location. In recent years the Learner property has been vacant and awaiting redevelopment. A 10,000 gallon underground diesel tank was removed from the eastern part of the property in 1988. The Learner property currently has no known storage tanks.

The Unocal property had eight above ground storage tanks which held a variety of petroleum derived products. Products were off-loaded from truck trailers and rail cars on site using flexible hoses and pumps. These tanks were demolished and removed from the Site in 1992.

During ownership and occupancy by Arco's predecessor, Richfield, four large above ground and eight underground tanks were located on the 411 High Street property. Prior to Richfield's sale of the property to William Belfry, the above ground tanks were removed and the underground tanks were abandoned without proper closure (tanks have not been closed in accordance with Chapter 16, Title 23, California Code of Regulations). Belfry immediately sold the 411 High Street property to the Koch Trust.

2. Site History - The Koch Trust has owned property at 301 High Street and 411 High Street since 1975. The Koch property (as managed by the Koch Investments Company) is currently occupied by Big B Lumberteria which is leasing the property and operating a retail lumber business.

Arco: Arco's predecessor Richfield Oil Company owned the 301, 401 and 411 properties from 1946 through 1975. From 1946 through 1967 Richfield operated a bulk petroleum distribution facility on the 411 property. In addition, Richfield was 50% owner in American Mineral Spirits Company - Western (AMSCO-W) from 1954 through 1969. AMSCO-W leased the 401 property from Richfield where it operated a bulk chemical facility. In 1969 Richfield sold their 50% interest in AMSCO-W to Unocal. From 1946 through 1975, Richfield also occupied the 301 property. In 1975 Arco sold both the 301 and 411 parcels to Mr. William Balfrey who immediately sold them to the Koch Trust.

Unocal: In 1965 Union Oil Company bought Pure Oil Company which held 50% interest in AMSCO-W; thus Union became a 50% partner with Richfield of AMSCO-W. Two years later in 1967 AMSCO-W negotiated a 68 foot wide strip of land along the northern end of the 411 property; thus AMSCO-W became lease holder of all of the 401 and a portion of the 411 property. In 1969 Union bought Richfields's share of AMSCO-W and became sole owner.

Amsco-W: American Mineral Spirits Company, Western (AMSCO-W) was a corporation formed when AMSCO, a nationwide chemical distributor, and Richfield formed a joint venture. AMSCO-Western was lease holder at the site from 1955 until 1975. In 1961 AMSCO, parent corporation of AMSCO-W, was

bought by Pure Oil Company which was subsequently purchased by Union Oil in 1965; thus Union was a half owner with Richfield. In 1969 Union bought Richfield's half of the AMSCO-W stock and became sole owner and shortly thereafter AMSCO changed its name to the Union Chemicals Division of Unocal. In addition to leasing the 401 property from Richfield, from 1967 until 1975 AMSCO-W leased the northern portion of the 411 property from Richfield and in-turn subleased it to Earl Foster and Frank Peckett, dba Foster Chemical. In 1975 the leases for 401 and the 411 properties terminated and control of the property including the buildings constructed for Foster Chemical at 411 High Street reverted to Arco.

Foster Chemical Company: Foster Chemical Company has been named a discharger because it subleased the northern portion of the 411 property from AMSCO-W where discharges of pollutants are believed to have occurred. From 1967 through 1975 AMSCO-W leased the northern portion of the property from Richfield who was the owner of the property. AMSCO-W in turn subleased that part of the 411 property first to Earl Foster and then, in 1972 to Frank Peckett, dba Foster Chemical Company.

Mr. Frank Peckett: Mr. Peckett was owner of the Foster Chemical company. In 1972 he assumed the lease that Foster Chemical held with AMSCO-W for a portion of the 411 property where discharges of pollutants to soil and groundwater are believed to have occurred.

3. Documented Releases - A major spill was reported at this Site in June of 1983 when 23,300 gallons of toluene was spilled during rail car off-loading at the Unocal tank farm. Unocal estimated that there were between 3,600 and 4,000 gallons of toluene in an undissolved fraction (free phase) in the subsurface.

Unocal: Subsurface investigations showed soil and groundwater on the Unocal property to contain various solvent chemicals and petroleum constituents. Since 1983, Unocal has conducted extensive soil and groundwater investigations both on and off site to characterize the scope of the toluene spill. Dissolved volatile organic compounds (VOCs) have been detected in groundwater monitor wells since 1983.

Compounds detected in groundwater include: tetrachloroethane (PCE), trichloroethylene (TCE), 1,1,1 -trichloroethane (1,1,1 - TCA), 1,1,2 - trichloroethane, 1,1 - dichloroethane (1,1 - DCA), 1,2 -dichloroethane (1,2 - DCA), dichloromethane (methylene chloride), 1,1 -dichloroethylene (1,1 -DCE), chloromethane, Freon 113, vinyl chloride, benzene, ethylbenzene, acetone, toluene, methylethylketone (MEK) and isopropanol. Semivolatiles compounds detected in groundwater include: flouranthene, isophorone, napthalene, phenanthrene, pyrene, phenol, and pentachlorophenol.

Toluene found in soil and groundwater on site is believed to be largely derived from the 1983 toluene spill. The sources of additional chemicals appear largely to spillage, inadequate chemical handling practices, overflows and/or leakage from tanks and piping.

Arco: Compounds detected in groundwater include: TCE, PCE, 1,1,1 -TCA, 1,1-DCA, DCE, chloromethane, vinyl chloride, methylene chloride, benzene, ethylbenzene, acetone, toluene, and MEK, xylenes and TPH as gas and diesel.

Learner: In 1983 Unocal conducted an investigation of chemicals on its own property and the adjacent Learner property which included soil borings and the installation of 25 monitor wells.

In 1988 and 1989, Unocal installed nine temporary monitor wells, 75 soil borings and 16 monitor wells, conducted subsurface sampling and analyses, aquifer testing, a soil gas survey, and soil venting system (Vapor Extraction System) performance testing. The results of these investigations indicated soils and groundwater pollution on the Learner property.

Compounds detected in groundwater include PCE, TCE, 1,1,1-TCA, 1,1-DCA, 1,1,2 -TCA, 1,2 -DCA, DCE, chloromethane, vinyl chloride, methylene chloride, benzene, ethylbenzene, acetone, toluene, and MEK. The toluene present on the Learner property is derived from the 1983 toluene spill and other up-gradient sources. The chlorinated chemical compounds appear to be primarily derived from the Arco property at 411 High Street.

4. Hydrogeology - The Site is located on alluvial deposits characterized as sequences of silty clay sediments interbedded with sand and gravel lenses. Site investigations have identified three distinct water bearing zones, referred to as Zone A (upper), Zone B (lower), and Zone C (deep), which are separated by relatively impermeable confining units.

Zone A sediments consist of discontinuous sandy deposits and extend from the ground surface to approximately 8 feet below ground surface (bgs). Seasonal groundwater flow in the Zone A unit is generally south-southwest towards the Oakland Inner Harbor. The A/B confining unit consists of silty and sandy clay deposits from 8 to 15 feet bgs.

The Zone B unit consists of silty sand and silty clay deposits from approximately 17 to 30 feet bgs. Groundwater in the Zone B is influenced by pressure effects caused by tidal fluctuations in the estuary. Groundwater for the Zone B unit flows west on the northern portion of the site and north-northeast on the southern portion of the Site and south south-east in the

vicinity of the Arco property. The B/C confining unit consists of silty sandy clay and clayey silt deposits of variable thicknesses ranging from 30 to 45 feet bgs.

The Zone C unit consists of relatively permeable sediments as poorly graded gravel and well graded sand. Groundwater flow in Zone C is influenced by tidal fluctuation similar to Zone B. Groundwater flow on the northern portion of the Zone C unit is away from the Oakland Inner Harbor during high tide to the northeast and to the southwest away from the Inner Harbor during low tide. The direction of groundwater flow on the southern portion of the site is toward the southeast at high tide and the southwest at low tide.

5. Interim Remedial Actions - Interim remedial actions have been taken by Unocal including construction and operation of an interceptor trench which runs along the western shoreline of the Unocal property. The trench is designed to remove groundwater, that would impact the Oakland Inner harbor, from the upper Zone A. Groundwater is treated using activated carbon and discharged to the Oakland Inner Harbor under NPDES permit. Additionally a vapor extraction system has been installed on both the Learner and Unocal properties to remediate soils in Zone A greatest impacted by the toluene tank car spill in 1983.

6. Rationale for Amendment - Board Order 90-133 required the Dischargers to complete further Site characterization, define current local hydrogeologic conditions, define the lateral and vertical extent of soil and groundwater contamination, evaluate cleanup alternatives and implement an interim remedial system to address contaminated groundwater. The Dischargers have complied with the substantive requirements of Order 90-133However, the design of the treatment system has been delayed by technical and mechanical complications. Because of these complications and the complexity of the Site due to the number of Dischargers, Regional Board staff have allowed additional time in meeting submittal dates for the investigation of impacted soils and groundwater. Subsequently the design and construction phases of this project, time dependent on the various investigation phases completed, have been delayed. Specifically the implementation of Task C.3.d (Interim Groundwater Treatment). This revised Tentative Order allows additional time for the design and construction of Task C.3.d and also includes new Task C.3.g, requiring the submittal of a five year status report to evaluate and monitor, or amend the cleanup systems for the Site.

7. The Board in a public meeting on March 17, 1993, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that the dischargers their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted there under, shall comply with the following revised time schedule:

PROVISION C.3.d. TASK: IMPLEMENTATION OF INTERIM REMEDIAL ACTION IN AFFECTED GROUNDWATER ZONES:

COMPLETION DATE: Shall be changed from Six months after the written approval by the Executive Officer of the report submitted in Section C.3.c to December 18, 1993

PROVISION C.3.g. TASK: FIVE YEAR STATUS REPORT:

Submit a technical report acceptable to the Executive Officer containing the following:

1. An evaluation of the effectiveness of interim remedial actions for on-site and off site soil and groundwater contamination. This would include both the vapor extraction and pump and treat systems,
2. Additional measures to achieve final cleanup goals for soils and groundwater as defined in Specifications A.3 and A.4 respectively,
3. The tasks and time schedule necessary to implement any final cleanup measures.

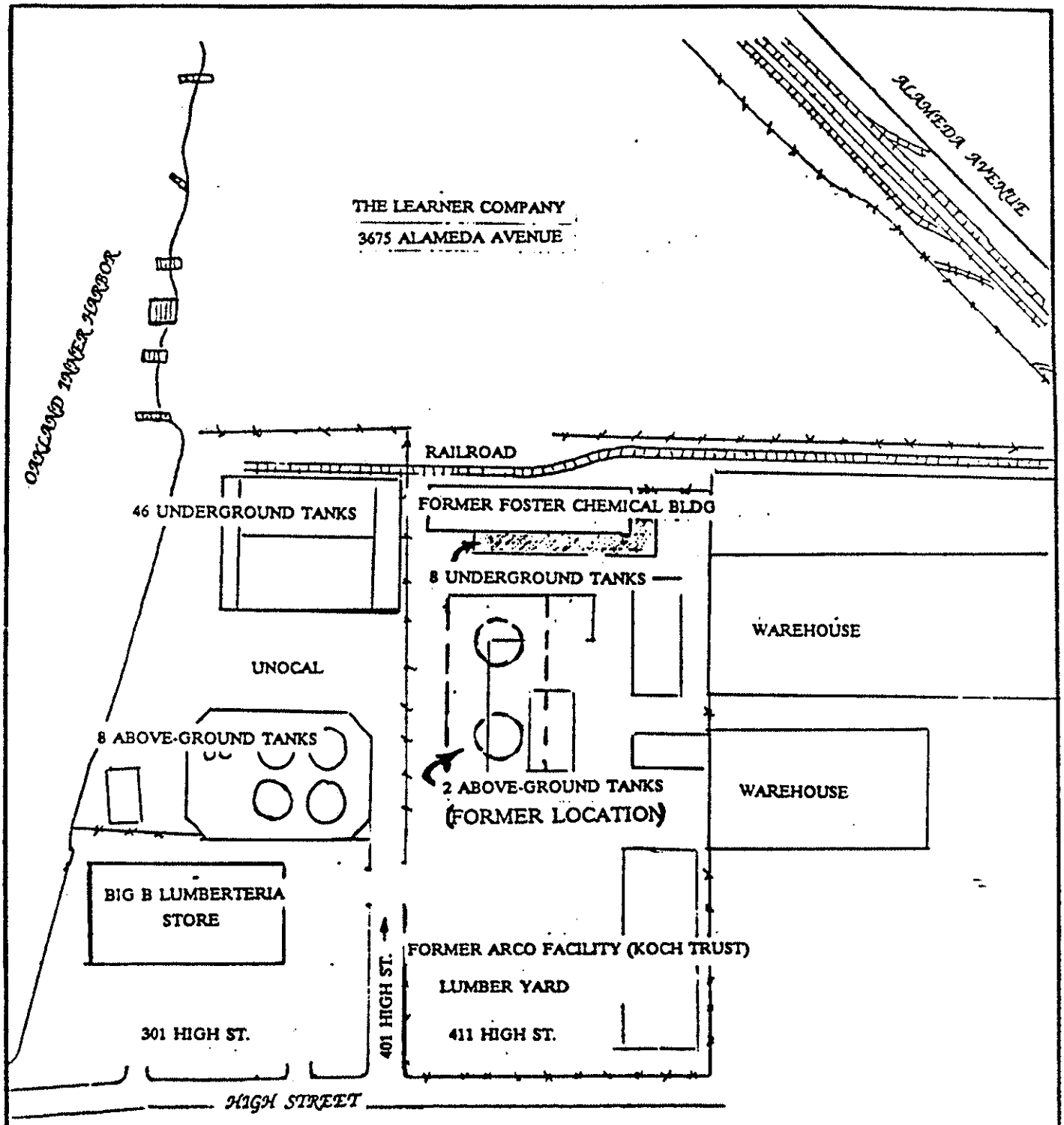
If final groundwater cleanup objectives have not been achieved through the implementation of the approved soil and groundwater remediation plans, this report shall also contain an evaluation addressing whether it is technically feasible to achieve these objectives by other means. If so, this report shall include a proposal for procedures to do so. If not, this report shall contain proposed alternative cleanup objectives and rationale.

COMPLETION DATE: December 18, 1998

I, STEVEN R. RITCHIE, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region March 17, 1993.

Loretta Barsamian for
STEVEN R. RITCHIE
EXECUTIVE OFFICER

Attachments: Figure 1, Location Map



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

UNOCAL ARCO LEARNER

KOCH TRUST

Not To Scale

DRAWN BY: TRG	DATE: 5/10/90	DRWG NO.